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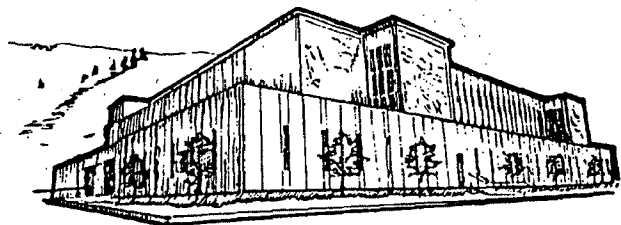
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The Function by Context of Sexual Fantasy in Adults

by

Stephen E. Cannon

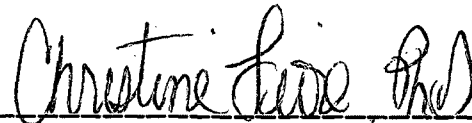
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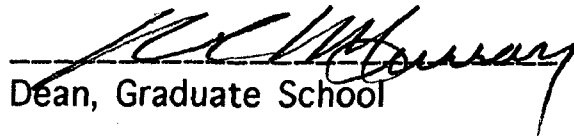
for the degree of Master of Arts

University of Montana, 1994

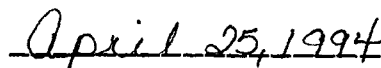
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The Function by Context of Sexual Fantasy in Adults (64 pp.)

Chairperson: Christine Fiore, Ph.D. *CF*

Research suggests that a number of factors influence the production quantity and quality of sexual fantasy in adults. Gender, age, attitude, personality features, social learning experiences, past sexual behavior and parental attitude all have been found to affect the frequency, duration, number, theme and explicitness of sexual fantasy. Recently, research has begun to explore context and its effect on fantasy frequency and style. Current research suggests that fantasy frequency varies depending on the context, with a significant difference between the levels of fantasy occurring during masturbation, nonsexual situations and consensual activity. The implication of some previous research is that sexual fantasy may occupy a compensatory role in covert human behavior, serving as an outlet for sexual overt behavior when individual or societal factors limit sexual acting out. This research was conducted as a direct test of the compensatory theory of sexual fantasy. It was hypothesized that: 1) subjects without available sexual partners (and thus fewer opportunities to engage in sexual behavior) would fantasize more across all contexts than those subjects with available sexual partners; and 2) subjects across gender and partner availability would fantasize more in nonsexual situations than during either masturbation or consensual activity, and more during masturbation than during consensual activity.

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The Function by Context of Sexual Fantasy in Adults

History of sexual fantasy research

As numerous researchers now suggest, sexual fantasies, thoughts and impulses are extraordinarily common in human beings of both sexes (Byer & Shainberg, 1991; Masters, Johnson, & Kolodny, 1986; Person, Terestman, Myers, Goldberg, et al., 1989). However, sexual fantasy long has been a misunderstood, under-researched area of covert, cognitive behavior in the psychological armamentarium of adult human beings.

As far back as the 12th century, sexual fantasy was considered a "supernatural visitation," and until the turn of this century the notion persisted even within the medical community that the activity was evidence of demonic possession (Mednik, 1977). Since Freud's initial interpretations and suppositions about fantasy that also occurred around the turn of the century, the research, clinical and medical communities have conceptualized the phenomenon in radically disparate ways that have changed with decades of research. Freud was not the first to seek an explanation of sexual fantasy and its behavioral ramifications, and he was not the first to pathologize the activity. But it was his opinion that set

the climate for research through much of this century. According to Freud (1908, in Mednik, 1977), fantasy served a purpose of fulfilling wishes that were individually or culturally unacceptable, yet unconsciously and repetitiously driven as a defense mechanism to ward off pathological impulses. Wrote Freud: "Every single phantasy (sic) is the fulfillment of the wish, a correlation of unsatisfied reality" (p. 248).

Despite later research that refuted Freud's negative view of fantasy, the notion persisted for the first half of this century that the mere existence of sexual fantasy was a clinical indicator of pathology (Davidson & Hoffman, 1986). Maslow (1942) and Eidelberg (1945) may have been the first researchers to begin questioning the pathologization of sexual fantasy and to begin a trend toward normalization of the activity. By the 1950s and '60s, as Davidson and Hoffman (1986) wrote, "sexual fantasies finally came to be viewed as behavior to be studied rather than a symptom to be cured." Finally, modern-era psychological researchers have concluded that the covert behavior is both common and healthy (Brown & Hart, 1977; Davidson & Hoffman, 1986; Chick & Gold, 1987). In fact, previous research has shown that 97-99% of various samples reported sexual fantasy experience at least occasionally (Brown & Hart,

1977), and sexual fantasy incidence has been positively correlated with sexual satisfaction and health (Byer & Shainberg, 1991; Masters, Johnson & Kolodny, 1986) as measured by self-reported affective and behavioral dynamics that include ability to achieve orgasm during reciprocal sexual activity. The overall measures of commonality and normality have been replicated in every decade since Kinsey, et al (1953) conducted their scientifically unsound, but landmark survey that had a radical impact on not only future research and clinical work with sexual fantasy, but on the entire sexual psychic infrastructure of the culture (Byer & Shainberg, 1991).

Once research revealed the frequency as well as the qualitative range of normal fantasy experiences, attention was turned to the thematic aspects of the phenomenon, often focusing on gender differences. The initial research tended to dichotomize groups (i.e., married/unmarried samples) or to focus on one gender alone. Researchers also often failed to control for such systematic biases as overt sexual behavior within varying relationship parameters, proximal and ultimate availabilities of sexual partner, sexual orientation, race, contextual roles and sexually dysfunctional individuals in the sample.

In recent years (1970 to present), the sexual fantasy research has begun to sort through what once were considered tangential and/or nuisance variables that we now know have a significant impact on the internal psychic experiences of adult human beings. Experimenters now devote considerable energies, for example, to isolating effects of context (whether fantasy occurs more often or differently during reciprocal, consensual sexual activity, masturbation or non-sexual situations) and personality (extra/introversion, religiosity, high/low sex guilt, liberal/conservative attitudes, etc.). Recent research suggests that gender (DeMartino, 1974), liberal and conservative attitudes (Brown & Hart, 1977; Halderman, Jackson & Zelhart, 1985), sexual experience (Gold & Chick, 1987-88) and individual sex-related guilt levels (Moreault & Follingstad, 1978) all are associated with frequency, duration, number and explicitness of sexual fantasies. Additionally, clinical treatment programs for sexual disorders ranging from pedophilia to psychogenic inhibited arousal have sprung from research into sexual fantasy.

The more that research began to isolate variables that contribute to the style and quantity of sexual fantasy experience, the phenomenon was normalized even further and removed from the rubric of mysterious and

hidden aspects of human sexuality. Chick & Gold (1987) reported that sexual fantasy has come half-circle since the days of Freud and now is considered "a normal and healthy aspect of human sexuality" (p. 61). Most researchers now wholeheartedly agree that the covert activity is common and is a reliable indicator of sexual functioning (Nutter & Condrón, 1985). The mental activity is so widespread that researchers routinely report that almost everyone in their samples fantasizes from time to time (Brown & Hart, 1977; Byer & Shainberg, 1991; Masters, Johnson & Kolodny, 1986). Unfortunately, most of those samples also have been drawn from the traditional college-age subject pool (Jones & Barlow, 1990), and the research often tends to focus on only one of the sexes at a time. Only a few of the less than 70 published journal articles over the last 20 years in the area of adult sexual fantasy have attempted to contrast responses across gender and age, while many of the others do not control for individual sexual behavior and other within-subject confounds.

Only within the past few years has the focal point of the research moved into the area of context (Pelletier & Herold, 1988). This new direction in research into the area of context has its roots in historical questions regarding the role and function of fantasies. In 1960, Beres (as

quoted in Rokach, 1990) suggested two possible roles, writing that fantasy "may be a substitute for action or it may prepare the way for later action (p. 328)." Rokach (1990) added that fantasies "may create or intensify sexual arousal or may be a response to an already aroused state" (p. 427). In their attempt at answering the question, "Does fantasy drive or replace sexual behavior?", Person, Terestman, Myers, Goldberg & Borenstein (1992) state flatly that conscious sexual fantasies should not be considered "compensation" for lack of sexual activity. Halderman, Jackson & Zelhart (1985) suggested that fantasy may serve other roles more closely linked to behavior. For example, they wrote, fantasy may allow individuals to explore behavioral options and consequences, serving as a mental rehearsal of potentially high-risk behavior, or it may reflect personality dynamics or unfulfilled desires.

But some of these researchers at times have been precipitous in making sweeping generalizations regarding their data. For example, the findings of Person et al (1992) suggest only a loose corollary between sexual experience and sexual fantasy, and their results do not speak directly to the sexual behavior-fantasy link. Person et al used as their criteria for sexual behavior the range of sexual activities in which their sample had

participated (e.g., kissing on the lips and fondling of the breasts through clothing on one end of the continuum to sexual intercourse with two or more people or attendance at an orgy on the other end). Their findings suggest that the wider range of sexual activities an individual has experienced is highly correlated with the frequency of sexual fantasy. Although they did circumscribe a time frame for sexual behaviors and fantasies (within the last three months prior to the survey), they did not measure the frequency of occurrence, but rather, they counted the number of different types of experiences. In other words, Person et al measured sexual experience, not sexual behavior, and claimed that their results irrefutably contradicted the compensatory theory of sexual fantasy because those with a wide range of sexual experience also had a wide range of sexual fantasy experiences. But they did not measure frequency; they simply measured variety.

While it is apparently true that sexually experienced individuals are more likely to participate in sexual fantasy than individuals with little or no sexual experience, at the same time, other research suggests that sexual fantasy occurs more frequently during nonsexual situations and masturbation than during consensual sexual activity. DeMartino (1974)

found that fantasy occurs with a high frequency during masturbation and coitus, but several studies have found that fantasy occurs more often in nonsexual than in sexual situations (Davidson & Hoffman, 1986; Pelletier & Herold, 1988). So, while some researchers, such as Person et al (1992), may suggest that questions regarding a substitution role for fantasy are moot, more research is needed before a consensus can be reached regarding whether sexual fantasy is or is not, as theoreticians from Freud to modern times have suggested, a compensatory activity.

In 1991, I conducted a large pilot project in this area (Cannon, 1991), although the focus of that research was not driven by the compensatory hypothesis, and the work had serious methodological flaws. In that pilot work, conducted with 240 undergraduate volunteer subjects at a small liberal arts college in Colorado, the data revealed that subjects without available sexual partners had significantly higher rates of fantasy than did those with partners, $F(236,1) = 7.01, p \leq .001$. However, that finding must be interpreted cautiously because subjects were not offered an operational definition of available sexual partner, and the analysis that revealed that particular finding was considered *a posteriori* because it was unrelated to the hypothesis that led to the research. Nonetheless, the

partner availability finding suggested that the compensatory issue might not be a closed case, and that further research with tighter controls was warranted.

The compensatory theory revolves around biologically focused research that suggests that the sexual urge in any organism, including humankind, is linked to the basic drive to reproduce. While they may argue about the specific methods that organisms use, most animal researchers, for example, agree that all living organisms have at the forefront of their existence an innate motivation, need, drive or urge to reproduce (Rosenblatt & Komisaruk, 1977; Alcock, 1989). Without that sexual urge, a species would vanish from existence in a single generation. Thus, the compensatory theory of sexual fantasy suggests that the human reproductive instinct will manifest itself in overt sexual behavior when the opportunity presents itself, while when opportunity is limited, human beings may compensate for overt sexual behavior by participating in increased sexual fantasy, temporarily relieving the urge to reproduce.

The present research asks straightforwardly: Can sexual fantasy serve a role as a substitute for sexual behavior, with the latter defined as the frequency of any sexual activity within a limited time frame? The

purpose of this study was to compare sexual fantasy frequencies reported by college-age men and women in four contexts (overall levels of fantasy, as well as fantasy during consensual sexual activity, masturbation and nonsexual situations). Based on previous research, it was hypothesized that:

1. Subjects without an available sexual partner would report greater frequency of sexual fantasy across gender and context, supporting the hypothesis that one of fantasy's roles is to substitute for overt sexual behavior when acting on urges and impulses is either inappropriate because of social restrictions or unlikely to occur because an appropriate sexual object is not available to the individual.

2. As related to context, subjects across gender would report higher rates of sexual fantasy during nonsexual situations than during either masturbation or consensual reciprocal activity, and that rates for both sexes during masturbation will be higher than during reciprocal activity, regardless of orientation, supporting previous research with similar outcomes.

Method

Subjects

Subjects were 112 undergraduate students enrolled in the Introduction to Psychology course at the University of Montana, Winter/Spring semester 1994, who participated for course credit. Fifty-nine percent of the subjects ($n=66$) were female, with males making up the other 41 percent ($n=46$) of the sample. As anticipated, the majority of the subjects were age 25 or younger ($n=89$), with 60 percent ($n=68$) of the total sample 20 years or younger in age.

Subjects in this study were predominantly white ($n=107$), middle class with a variety of religious backgrounds (See Table 1). Additionally, the sample was largely unmarried (79 percent reported being single), and 91 percent reported themselves to be heterosexual.

Insert Table 1 about here

Of critical importance to this research was the availability of a sexual partner in the subjects' lives over the past four-week period. Fifty-six

Table 1

Demographic Information Regarding Sample (n=112)

	<u>No.</u>	<u>Percentage</u>
Gender		
Female	66	58.9
Male	46	41.1
Age		
20 and under	68	60.7
21-25	21	18.8
26-30	9	8.0
31-35	5	4.5
36 and older	9	8.0
Ethnicity		
White	107	95.5
Hispanic	3	2.7
Native American	2	1.8
Religious Preference		
None	32	28.6
Catholic	31	27.7
Other (NOS)	31	27.7
Protestant	18	16.1
Annual Income		
<\$7,500	12	10.7
\$7,500-\$15,000	15	13.4
\$15,000-\$25,000	13	11.6
\$25,000-\$35,000	14	12.5
>\$35,000	58	51.8
Marital Status		
Single	88	78.6
Married	8	7.1
Divorced	8	7.1
Cohabiting	8	7.1
Sexual Orientation		
Heterosexual	102	91.0
Celibate	8	7.1
Bisexual	2	1.8

percent of the total sample (n=63) reported that they did have an available sexual partner as defined by the research criteria.

Materials

The data for this research was gathered through a self-report, pencil-and-paper questionnaire designed by the experimenter. A pilot project using the device was run prior to the formal administration of the questionnaire. A copy of the questionnaire is attached as Addendum A.

Additional materials used in this project were 112 Scantron computer scoring sheets and No. 2 soft-lead pencils, as well as several collection boxes where completed Scantron sheets and questionnaires were deposited by subjects.

Procedure

The questionnaire was administered initially to a pilot group of subjects (n=25). The results of the pilot project showed a solid spread of responses, indicating that subjects were able to locate a response selection that reflected their lifestyle and behaviors. However, the question of whether or not the cells in the design could be filled was raised when only one of the pilot subjects reported that they matched the

criterion, "No available sexual partner." It was determined, however, that those particular results were a sampling anomaly. The decision to continue with the survey was made, and in fact, the survey sample showed a more even split in the partner/no partner categories, although those with an available sexual partner numbered greater than those without (63-49).

The final step in the pilot project was an exit interview with each subject to assess the degree to which the questionnaire instructions and definitions were understood and followed. The exit interview results suggested that although the sheer volume of definitions initially overwhelmed some subjects, they were able to work through the process adequately by being able to access the definitions throughout responding. Nothing in the exit interviews suggested that significant alterations to the questionnaire needed to be made.

The formal administration of the questionnaire took place at six different times over two days. Subjects were required to sign up for a specific time, with a total number of subjects run at each session limited to 25 (mainly to accommodate privacy needs by spreading the subjects out in the experimental room).

Subjects were required to enter the room where the survey was to take place in single file. They were given a copy of the questionnaire, a blank Scantron sheet, an informed consent form and a No. 2 pencil. They then were asked to sit at least two desks apart from other subjects. Once subjects were seated, they were asked to make sure they had each of the three items, and then the following instructions were read to them by the male experimenter:

Please refer to the single sheet of paper with the words "Informed Consent" printed at the top of the page. Please read along on your sheet as I read the text out loud.

You are being asked to participate in a survey that involves dynamics of human sexuality. The study is being conducted by a graduate student in psychology at the University of Montana. Even though you have signed up to participate in this experiment at this time, you are free to leave and not participate without penalty.

The responses you give to this questionnaire are completely anonymous. There is absolutely no way to trace responses to any individual. Because it is important to get a full response from each subject, please attempt to answer each question fully and honestly. However, if necessary, you may skip a question.

Record your answers on the Scantron sheet provided, using a No. 2 soft-lead pencil or the equivalent. If you do not have a pencil, the experimenter will provide one for you. Please make no marks on the questionnaire itself, and make sure that you begin your answers on the side of the Scantron that begins with answer line No. 1. Please do not fill in the blanks asking for name and date. When you are finished filling out the questionnaire, please deposit it, the Scantron sheet and the

cover letter/consent form in the appropriate boxes located next to the exit on your way out of the room.

If you do not wish to participate, please leave the questionnaire unopened and leave the room as quietly as possible.

Because the questionnaire deals with explicit sexual material, you may find it helpful to discuss your feelings about this research with the experimenter or someone else. The experimenter will be available after the experiment to talk individually with subjects who request a debriefing. If you are uncomfortable discussing your feelings with the experimenter, counseling from members of either gender is available to you. Give your name and telephone number to the experimenter, and he will forward them on to an individual who will contact you to discuss your feelings about the material. Additionally, there will be an overall discussion and debriefing about this research presented at (time and place were announced).

If you understand the conditions of the experiment as outlined above, please indicate so by signing the Informed Consent Form.

Next, subjects were asked to pick up the questionnaire, which had several pages stapled together. They then were told the following:

There are several definitions that may help you decide how to answer some of the questions in this study. The definitions are on the first page of the questionnaire. You may refer back to these definitions at any time while completing the questionnaire. Please read along with me as I read the definitions out loud.

In order to complete the questionnaire, the following definitions may be useful:

•Sexual fantasy: Any mental image or imagination which contains sexual matter and/or is sexually arousing to the

person having the fantasy.

- Nonsexual-context fantasy: Any sexual fantasy which is experienced at any time day or night (except in nocturnal dreams), other than during masturbation or consensual sexual activity.

- Masturbatory fantasy: Any sexual fantasy experienced during masturbation which is sexually arousing. (Masturbation is defined as becoming sexually aroused usually to the point of orgasm by manipulating your own genitals with your hands, or an object such as a vibrator.)

- Consensual activity fantasy: Any sexual fantasy experienced during sexual relations with another person, usually leading up to and/or occurring during sexual interaction.

- Consensual sexual activity: Any behavior with another person(s) that is sexual arousing to all persons involved, which may or may not lead to orgasm. The behaviors in question include but are not limited to:

1. Petting, fondling or touching of the breasts, clitoris, vulva, vagina or anus of a female or the penis, scrotum or anus of a male.

2. Heterosexual intercourse (insertion of the penis into the vagina).

3. Heterosexual or homosexual oral sex (stimulation of the penis, vagina, breast or anus of one person by the mouth or tongue of another).

4. Heterosexual or homosexual anal intercourse (insertion of the penis into the anus).

- Available sexual partner: One or more person(s) with whom you were able to participate in consensual sexual activity at least half the time when you wanted to engage in sexual activity over the past four-week period. Below are a few examples of situations that might help you decide in which category you belong regarding available sexual partner:

1. If you are married, and one time during the past month you were interested in sexual activity but your partner was not, you would answer "No" to the question regarding available

sexual partner.

2. If you are single and dating several people, and have sexual relationships with each of them, if you were able over the past four weeks to have sexual relationships with any one of them at least half the time when you were interested in having sexual relations with anyone, you would answer "Yes".

3. If you are living with someone and twelve times during the past four weeks you desired sexual activity and they were receptive six times, you would answer "Yes" to the question regarding available sexual partner.

Do you have any questions regarding any of the definitions or instructions related to this study? If not, please open the questionnaire and begin.

The definitions used in this study were adapted from those developed by Mednik (1977). Mednik's three levels of context also were used in this study.

The sexual experience influence on fantasy has been defined many ways or not at all in previous research (Chick & Gold, 1987). Other researchers have used sexual experience, as defined by number of sexual partners or number of experiences of one type of behavior, as a predictor of fantasy (Brown & Hart, 1977; Gold & Chick, 1988), while some of the earliest research in the area simply used married/non-married groups (McCauley & Swann, 1978), apparently satisfied to assume that being married was in itself evidence of sexual behavior. Since this study was concerned with

the relationship between sexual fantasy and sexual behavior, it was important to control as much as is possible for sexual behavior.

Accomplishing that behavioral control was solved by dichotomizing groups into available/no available sexual partner. Other researchers, such as Chick & Gold (1987), have suggested conceptualizing sexual experience as a function of the number of a times a behavior has been engaged in multiplied by the number of partners for each behavior. However, because this study focused on a "snapshot" of peoples' sexual fantasy activity and overt physical behavior, the operationalization of available sexual partner was defined by the preceding four-week interval.

Secondarily, to account for persons not involved in monogamous or committed erotic relationships, not to mention the variations of sexual expression within monogamous relationships, this project limited the definition of "available" when applied to sexual partners. Because of the paucity of literature in this area, and the inherent caprice of making such distinctions, the definition of available sexual partner was defined as the following: Available sexual partner: One or more person(s) with whom you are able to participate in consensual sexual activity at least half the time when you want to engage in sexual activity. Specific examples of

each category (partner available vs. non-available) were provided to help guide subjects in making the appropriate responses.

This definition of partner availability seemed to address the core issues this research was designed to measure. It begins to control for potential confounds related to the actual behavior of partner on the primary dependent variable of sexual fantasy. The anticipated result is an isolation of the fantasy effect after behavioral confounds have been teased out of the mix, giving a "purer" view of fantasy's role and function.

Results

Scantron cards were first reviewed for random responding (e.g., responding to the third option of an item when only two response categories were active). No apparent random responding was detected, although two cards were rejected due to double-marking of responses.

The initial data analysis was conducted on the demographic variables (See Table 1) to assess the representativeness of the sample. The sample was clearly quite young, Caucasian, middle- to upper-middle-class, single and heterosexual. The sample was somewhat overrepresented by females (66-46), as well, although all subsequent analyses were conducted with unequal n procedures.

The second major step in analyzing the data was an attempt to determine the consistency of responding. Several of the questions on the instrument should have correlated highly if subjects were being consistent in their responding. For example, three different questions required subjects to report overall frequency of fantasies in any context. The first question asked subjects when they last had a sexual fantasy, the next asked how often they usually experience fantasies, while the third question asked them to estimate the total number of fantasies experienced over the past four weeks. The responses would be expected to correlate highly, i.e., those subjects who report frequent fantasies should also report a higher total over the last four weeks. The results of a Pearson product-moment correlation coefficient indicate that the items in fact were highly correlated (r 's ranging in the predicted direction from .745 to .808). Those results could be interpreted as offering limited support for the reliability of the instrument, and suggest that subjects by and large were consistent in their responding.

Tests of the partner availability hypothesis

An omnibus F-test, (MANOVA) was performed on two between-subjects

factors with two levels each (gender and partner availability) and one within-subjects factor with four levels (context) to test both of the predicted main effects. Although the data collected in this project were in essence ordinal data acquired by having the subjects rank their behaviors in discrete categories, using a parametric omnibus procedure reduced the probability of Type I error while producing a p value identical to that produced by non-parametric procedures (personal communication, James Walsh, Ph.D., Feb. 21, 1994). Non-parametric tests performed on the data corroborated the F-test findings.

The dependent measures did not support the hypothesized main effect for partner availability, $F(1,108) = 2.00, p=.16$, but did support the main-effect predictions of context $F(2,216) = 10.32, p\leq.001$. Although the partner availability finding did approach significance (at a marginal level), the means (See Table 2) ran counter to the predicted direction, i.e., those with partners had a higher overall rate of fantasy ($M=2.42$) than did those without partners ($M=2.20$).

Insert Table 2 about here

Insert Figure 1 about here

Additionally, gender was found to vary significantly across all other conditions $F(1,108) = 17.40, p \leq .001$, i.e., males reported higher levels of fantasy ($M=2.74$) across the board than did females ($M=2.04$). The gender effect was consistent with previous research (Person et al, 1992).

Insert Figure 2 about here

Tests of the context hypothesis

The within-subjects, or context, factor was found to be significant in two different analyses. The first analysis was a 2 (partner/no partner) X 2 (gender) X 3 (context) MANOVA procedure that included all three levels of context (nonsexual situations, masturbation and consensual activity).

Table 2

Mean Self-Report Ratings of Sexual Fantasy by Context

	<u>n</u>	Overall	Mast.	NonX	Cons.	Marginals
Partner						
Yes	63	3.33	1.73	2.41	2.22	2.42
No	49	3.00	2.06	2.35	1.37	2.20
Marginals		3.17	1.90	2.38	1.80	
Gender						
Male	46	3.78	2.24	2.74	2.20	2.74
Fem.	66	2.77	1.62	2.14	1.61	2.04
Marginals		3.28	1.93	2.44	1.91	

Note: Mast.=masturbatory fantasy; NonX=nonsexual situation fantasy;
Cons.=consensual activity fantasy.

Figure 1

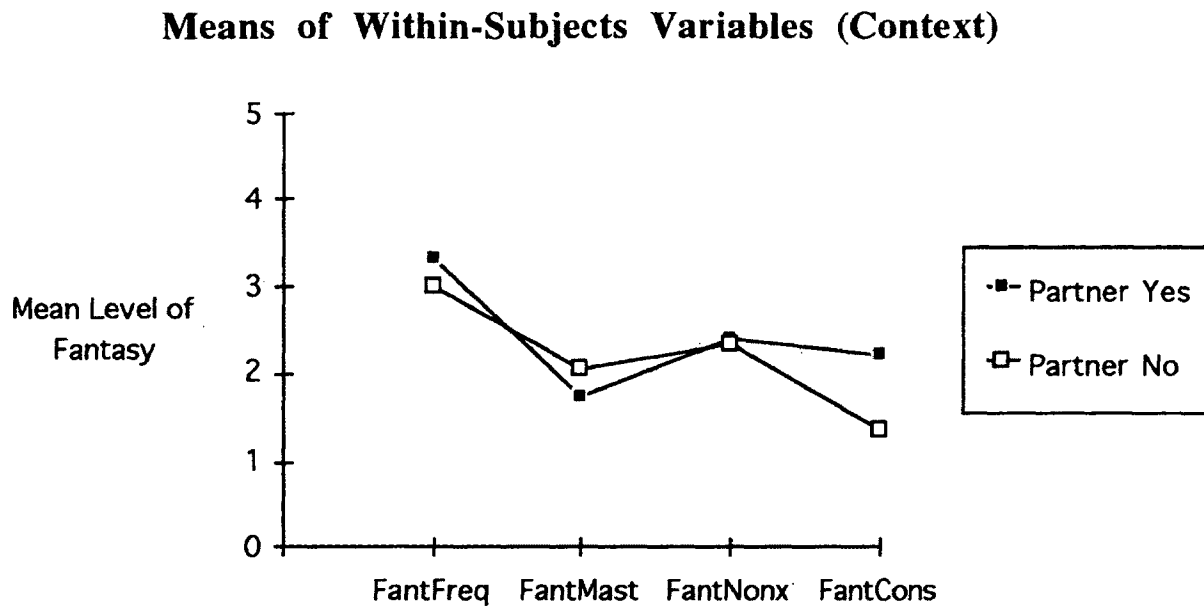


Figure Caption

Figure 1. Plotted means of the three within-subjects variables (context) and overall level of fantasy. Note: FantMast = masturbatory fantasy; FantNonx = fantasy during nonsexual situations; FantCons = fantasy during consensual sexual activity.

Figure 2

Plotted Means: Context by Gender

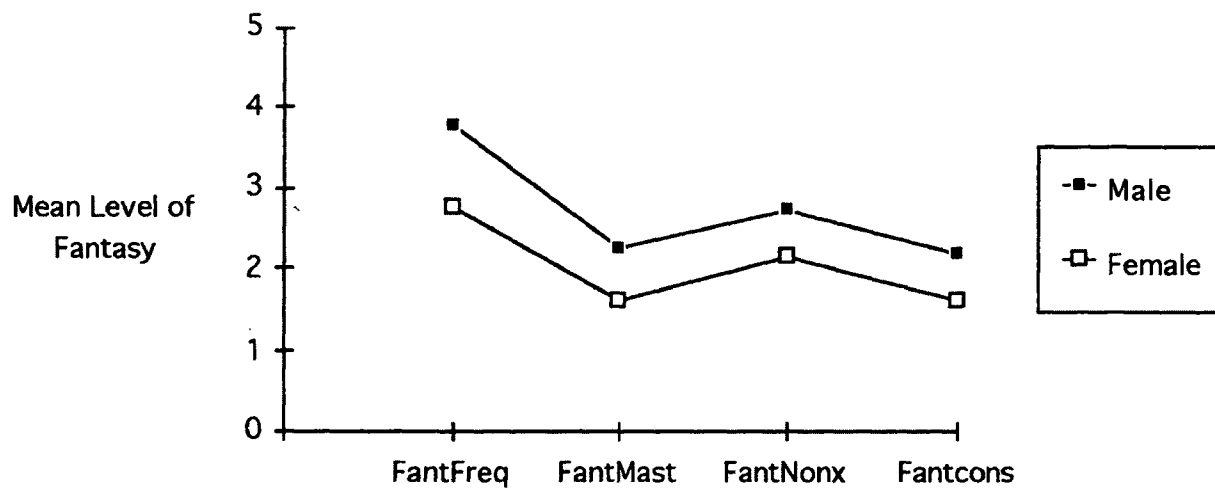


Figure Caption

Figure 2. Plotted means of the three within-subjects variables (context) and overall level of fantasy by gender. Note: FantMast = masturbatory fantasy; FantNonx = fantasy during nonsexual situations; FantCons = fantasy during consensual sexual activity.

In that analysis, context, $F(2,216) = 10.32$, $p \leq .001$, and gender (see above) both were significant. Additionally, partner was marginally significant, $F(1,108) = 2.00$, $p = .16$, and there was a significant partner by context interaction, $F(2,216) = 9.35$, $p \leq .001$ (See Figure 1).

Tukey HSD post-hoc tests revealed that each of the pairwise comparisons among context was significant except for the difference between masturbatory fantasy and consensual activity fantasy. The difference between nonsexual context fantasy and masturbatory fantasy was significant at the .05 level, as was the difference between nonsexual fantasy and consensual activity fantasy.

The partner by context interaction (See Table 2 and Figure 1) suggests that the two partner groups fantasize equally during nonsexual situations ($M = 2.41$ for partnered subjects, $M = 2.35$ for non-partnered), with non-partnered subjects fantasizing more during masturbation ($M_s = 2.06$ and 1.73 , respectively), but less during consensual activity ($M_s = 1.37$ and 2.22). The latter finding is not surprising given that, by definition, it would be expected that individuals without an available sexual partner would experience less consensual activity than those with partners.

But the context main effect was similar when an identical analysis

was performed as a 2X2 MANCOVA (in which gender was treated as a covariate) by limiting one of the within-subjects factors, i.e., taking out the consensual activity fantasy cell because of concerns that it was artificially driving up the within-subjects F value (see discussion section).

Without the consensual activity fantasy cell included, the within-subjects main effect still was significant, $F(1,108) = 13.83$, $p \leq .001$, while the partner by context interaction dropped to a marginal level of significance $F(1,108) = 2.09$, $p = .15$. The results of both F-tests support previous research that has found that fantasy occurs more often in nonsexual situations than either during masturbation or consensual activity, and that masturbatory fantasy occurs with higher frequency than consensual activity fantasy.

Those subjects without available sexual partners indicated significantly more fantasy during masturbation (See Table 3 and Figure 3), which is not surprising given that partner availability was found to be marginally significant on an ANOVA performed on frequency of masturbatory behavior, $F(1,111) = 2.72$, $p = .102$.

Insert Table 3 about here

Insert Figure 3 about here

The results reveal that those without available sexual partners masturbate more frequently ($M=2.12$) than do those with available sexual partners ($M=1.79$), and commensurately experience more masturbatory fantasy ($M=2.06$) than do those with sexual partners ($M=1.73$). To test the notion that the masturbatory fantasy context findings were being unduly influenced by masturbatory behavior, i.e, if you spend more of your time masturbating you subsequently spend more time engaged in masturbatory fantasy, an ANCOVA was run with masturbatory behavior treated as a covariate. Controlling for masturbatory behavior, the partner availability factor still was significant, $F(1,109) = 3.90$, $p=.05$, indicating that regardless of levels of behavior (e.g., masturbation), individuals without partners experience more masturbatory fantasy than do partnered subjects.

Table 3

Mean Self-Report Ratings of Sexual Behavior Over Last Four Weeks

	<u>n</u>	Masturbation	Consensual Activity
Partner			
Yes	63	1.79	3.05
No	49	2.12	1.31
Gender			
Male	46	2.22	2.37
Female	66	1.74	2.23

Figure 3

Masturbation During Preceding Four Weeks

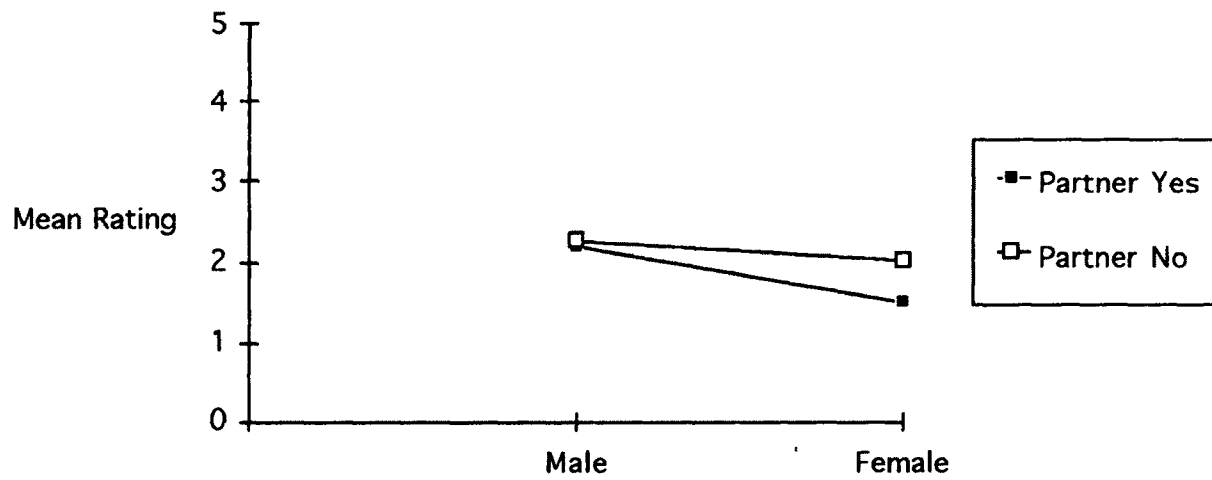


Figure Caption

Figure 3. Plotted means of self-reported frequency of masturbatory behavior during four-week period prior to survey.

Correlations of fantasy to behavioral measures

Additional analyses were performed on peripheral data gathered outside the predicted main effects question. For example, since this study was interested in looking at sexual fantasy not only within a situational context but in a behavioral context as well, Pearson product-moment correlation coefficients were conducted on the fantasy-to-behavior relationships. The results show that masturbation as a behavior is highly correlated with masturbatory fantasy, $r(112) = .89, p \leq .01$, while a significant but weaker correlation was found between consensual sexual activity and consensual activity fantasy, $r(112) = .51, p \leq .01$.

Other analyses were performed on variables that assessed subjects' ratings of the "saliency" of their sexuality (See Table 4). Subjects were asked to rate several items independent of their fantasy life. Those items included rating the level of pleasure they derive from their sexual experiences, the overall quality of their sexual activity and their level of desire for sexual expression. All three of the "saliency" variables were significant as related to partner availability (See Figure 4). Those subjects with available sexual partners desired more sexual activity,

$F(1,111) = 13.27, p=.004$, rated the quality of their past sexual experiences higher, $F(1,111) = 123.68, p\leq.0001$, and rated sex as a greater source of physical and emotional pleasure, $F(1,111) = 18.33, p\leq.0001$, in their lives than did those subjects without sexual partners. Additionally, a gender difference emerged on the desire variable in which males, not surprisingly, reported a consistently higher level of desire for sexual activity than did females, $F(1,111) = 8.52, p=.0043$.

Insert Figure 4 about here

Pearson product-moment correlation coefficients also were conducted (See Table 4) on the saliency measures crossed with the fantasy and behavioral measures. One result that emerged from that analysis was some support for the compensatory hypothesis of sexual fantasy in that overall fantasy was positively correlated with both desire for sexuality, $r(112) = .49, p\leq.01$, and masturbatory behavior, $r(112) = .35, p\leq.01$. Desire for sexual activity was also correlated with the rating of quality, $r(112) = .41, p\leq.01$, and pleasure, $r(112) = .37, p\leq.01$, as well as with both behavioral measures, consensual sexual activity, $r(112) =$

.53, $p \leq .01$, and masturbation, $r(112) = .23$, $p \leq .05$. Quality also was significantly correlated with pleasure, $r(112) = .48$, $p \leq .01$, and consensual sexual activity, $r(112) = .65$, $p \leq .01$. Additionally, pleasure and consensual sexual activity were significantly correlated, $r(112) = .38$, $p \leq .01$.

Insert Table 4 about here

Discussion

This research asked the question, "Can sexual fantasy function as a compensatory 'covert behavior' when overt behavior is restricted?" It looked at the differences in sexual fantasy patterns among adults with and without sexual partners across four levels of context (during nonsexual situations, masturbation, consensual activity and overall).

The data offer limited support for the compensatory hypothesis based on partner availability, contradicting my previous research (Cannon, 1991). But this finding begs explanation because of the strength of the disparate findings in the two pieces of research.

Figure 4

Three Ratings of Sexual Salience

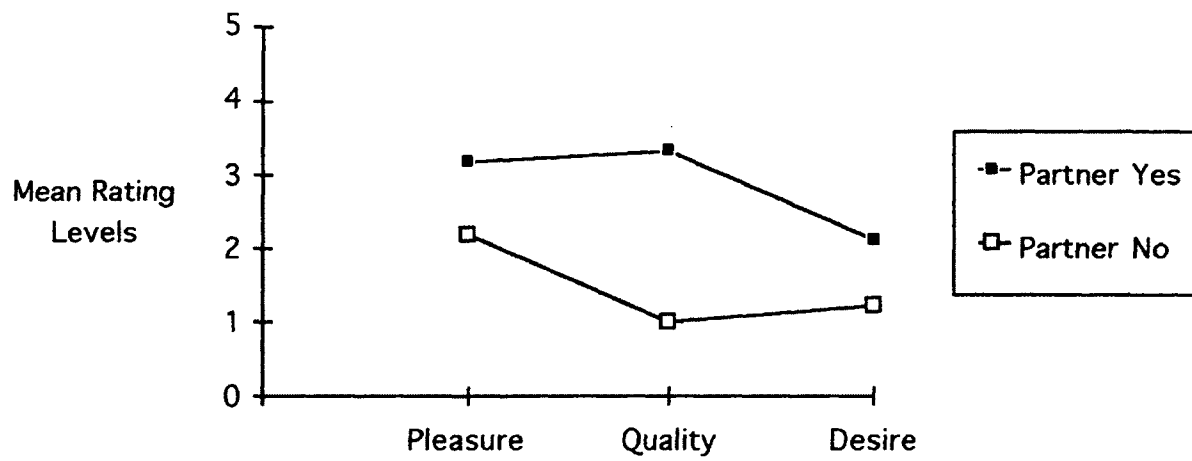


Figure Caption

Figure 4. Plotted means of three ratings of sexual salience by partner availability. Note: Pleasure = level of pleasure derived from sexuality; Quality = level of quality of sexual experiences; Desire = level of desire for sexual expression during four-week period prior to testing.

Table 4

Correlations Between Behavioral, Fantasy and Saliency Measures

		Saliency			Behaviors		Fantasy
	Desire	Quality	Pleasure	Consen.	Mast.	Overall	
Saliency							
Desire	---	.41**	.37**	.53**	.23*	.49**	
Quality		---	.48**	.65**	.09	.08	
Pleasure			---	.38**	.01	.13	
Behavior							
Consensual				---	.06	.18	
Masturbation					---	.35**	
Fantasy							
Overall						---	

*p < .05 **p < .01.

In the initial pilot work in this area, sexual partner was not operationally defined for subjects. Rather, they simply were asked, "Do you currently have a sexual partner?" The results were robust: Those without sexual partners (as defined individually and internally by each subject) had significantly elevated fantasy lives, $F(1,236) = 7.01$, $p \leq .001$, compared to those with available sexual partners. In the present research, great pains were taken to isolate the partner effect, resulting in a rather stringent set of criteria to define available sexual partner, an effort previous researchers apparently had deemed unnecessary or unworthy. It was the central focus of this research because the compensatory hypothesis suggests that fantasy may play a substitution role when acting out overt sexual behavior is limited by a number of potential factors. Others, particularly Persons et. al (1992) have stated flatly that sexual fantasy is a co-occurring event in the activation of sexual behavior, and does not exist alone as compensation for sexual experience.

In the present research, the main effect of partner availability was non-significant, although it approached significance, $F(1,108) = 2.00$, $p = .16$, in the initial omnibus F-test (see Results section above). Exit

interviews conducted with the pilot sample in this research indicated that the subjects clearly understood the definition of partner availability, offering support that the statistical findings are in fact valid indicators of subjects' sexual experiencing. An argument could be made, however, that the effect this research attempted to isolate (the link between sexual behavior and fantasy) was ablated by overly strict circumscription of partner availability. It could be argued that perhaps subjects in the early work in 1991, when offered the subjective, open-ended question regarding sexual partner, more clearly understood in their own experiencing what the link between behavior and fantasy was compared to the present sample of subjects, who had to fit their own experiencing into a somewhat artificial structure.

This research could be seen as conclusively closing the door on the compensatory hypothesis of fantasy. However, future research in the area could add to our understanding of the role and function of sexual fantasy in adults by taking a closer look at two important factors: age and sexual behavior. As with most psychological research, the vast amount of sexual fantasy work has been conducted with the traditional Introduction to Psychology pool, as has this research. Getting a better mix of older

subjects whose sexual experiencing has, like many personality traits, become more stable and static, could affect the data. Behavioral research in sexual experiencing has shown clearly that significant physiological and psychological effects, interacting with gender, emerge in the mid-20s and stabilize as subjects enter their 30s (Brecher et al, 1984). For example, research shows that masturbation trends between the sexes reverse with age, i.e., males experience masturbation and subsequent masturbatory orgasm at an earlier age than females and masturbate more frequently than females in the first few sexually active years, while females begin to experience more of the behavior and its effects (orgasm) in their 20s, continuing the trend into and throughout their 30s until they equal and then outpace males in masturbatory behavior as measured by masturbatory orgasm (Hunt, 1974).

The other side of the argument is that this research was able, in fact, to isolate the effect in question and was able to confirm what some writers have said all along, i.e., sexual fantasy is not a compensatory activity. It has been suggested that fantasy's role is multifaceted (Rokach, 1990) in a peripheral or adjunctive sense. Previous research has suggested that because fantasy is often used as a precursor or adjunct to

sexual behavior (both masturbatory and consensual), it cannot in of itself substitute for behavior (Person et al, 1989). Fantasy can initiate sexual arousal leading to sexual behavior; it can qualitatively alter a concomitant behavior; it can be used to explore socially unacceptable or risky behavior, or it can be used as a practice run of anxiety-provoking behavior generally considered within the social norm (Rokach, 1990). The latter two suggest an implicit compensatory role for fantasy.

It can be argued also, in operant terms, that fantasy functionally can be an antecedent to behavior, the (covert) behavior itself, a companionate covert behavior that subsidizes the overt behavior, or the consequence of cognitive processes, i.e., heightened sexual arousal for its own sake. The point being that fantasy may in fact serve several roles, depending on the needs of the individual. It might accentuate sexual behavior, either when alone or in a consensual erotic relationship; it might be used in response to sexual urges when it is unwise or unacceptable to act on those urges; and it might facilitate arousal leading to sexual behavior.

The lack of support for the compensatory question could have closed this issue were it not for the vastly different findings in two pieces of highly similar research. Those divergent results suggest that perhaps a

moderator variable is at work in the design, offering the possibility that the fantasy effect has yet to be isolated.

The main effect of context, also referred to as the within-subjects factor, was a robust finding in this work, supporting previous research with similar outcomes. Because of the concern over the consensual activity/partner available cell (See Figure 1) driving up the findings for context, analyses were run both including and excluding that cell. The results, however, remained consistent for the most part. Regardless of age, orientation, partner availability or other variables, fantasy does appear to occur reliably most often in nonsexual situations, and occurring second-most often during masturbation, with the lowest levels reported for consensual activity. It might be argued that this is a specious finding since people spend a proportionally greater amount of time in nonsexual situations than in situations in which masturbation or consensual activity occur.

The latter argument further refutes the compensatory hypothesis, suggesting that fantasy occurs in proportion to behaviors occurring externally. However, the present research contradicts that prediction. If fantasy occurs only proportionally to behavior, it would be expected that

fantasy would occur most frequently during whatever behavior is most prominent in the individual's experience. In this sample, subjects reported a significantly higher rate of consensual sexual activity over masturbatory activity, $t(111) = 2.095, p=.038$, suggesting that the sample also should experience more sexual fantasy during consensual activity than during masturbation. The opposite finding was true, however, of this sample, with fantasy during masturbation ($M=1.90$) being greater (although non-significant at the .05 level) than fantasy during consensual activity ($M=1.80$). The results suggest a behavior-fantasy interaction that is not unidimensional, or perhaps not linear.

Two other pieces of data from this research suggest variant interpretations of the relationship between behavior and fantasy that are both inconsistent and consistent with the compensatory theory of fantasy. The finding that fantasy occurs most frequently in nonsexual situations was significant in two different ways in which subjects were required to respond. Subjects were asked about overall frequency of sexual fantasy across context, which was significant, $F(3,324) = 44.01, p<.001$. Secondly, subjects were asked to estimate in which context they experience the most fantasy. Subjects overwhelmingly chose nonsexual situations, $X^2(4)$

= 175.4, $p \leq .001$, as representing the context during which most of their sexual fantasies occur. Both findings are consistent with previous research.

These particular analyses could be interpreted in different ways, however. It could be argued that it supports the non-compensatory position if one considers all nonsexual behaviors to be one discrete behavior, i.e., individuals spend much more time engaging in nonsexual behaviors than sexual behaviors. Therefore, the finding that fantasy occurs most frequently in nonsexual situations makes sense if fantasy is looked at as a peripheral event that accompanies behavior.

It also could be argued, however, that the vastly greater occurrence of fantasy during nonsexual situations reflects the notion that fantasy compensates or substitutes for behavior when acting out of sexual urges is limited by external factors, such as partner willingness or availability, social decorum, interpersonal abilities, etc. In other words, sexual impulses occur often, and given unlimited access to sexual objects with no social restraints, it could be hypothesized that human beings would engage in almost endless sexual behaviors with a variety of partners (Morris, 1967). In fact, 58 percent of this sample ($n=65$) reported

experiencing a sexual fantasy within the 24-hour period prior to testing, with almost 12 percent (n=13) reporting a fantasy within the hour prior to participating in this research. Therefore, the finding that fantasy occurs most often during nonsexual situations could be viewed as a compensatory expression of "sexual energy," i.e., we as a species are prone to numerous sexual urges which are prohibited by social structure, and to contend with those urges, we may use sexual fantasy as a temporary release of sexual energy until acting out (masturbation or consensual activity) is possible. This notion is consistent with Freud's initial ideas about fantasy (Rokach, 1990).

It would seem that the partner by context interaction might shed more light on the question. Subjects with sexual partners fantasize more than their non-partnered colleagues overall, but both groups fantasize equally during nonsexual situations. Additionally, non-partnered subjects experience more masturbatory fantasy, which is commensurate with their higher rates of masturbation. The interaction, then, offers mixed support for the compensatory hypothesis. The findings that non-partnered subjects masturbate more and experience more masturbatory fantasy is consistent with the non-compensatory theory, except that further

analysis reveals that the interaction stands if masturbatory behavior is controlled for.

However, since both groups fantasize equally during nonsexual situations, it could be suggested that the most significant factor affecting the production of fantasy is the limitation of acting on sexual urges. If fantasy does indeed play a compensatory role, at least occasionally, it is reasonable to assume that the role is called onto stage most frequently during nonsexual situations when urges and impulses are present but opportunity is not. The most compelling argument, of course, is that the results of nonsexual fantasy occurring most frequently is simply a result of human beings spending considerably more time in nonsexual behavior than in either intercourse (consensual behavior) or masturbation (solo sexual behavior).

The results showing that subjects with partners fantasize more overall could be an artifact of what I've labeled "sexual saliency" mentioned in the Results section. Recall that partnered subjects not only reported higher overall levels of fantasy, but in addition they had significantly higher levels of sexual desire, rated the quality of their experiences significantly higher than subjects without partners, and also

rated sex higher as a source of pleasure than did those without partners. These results suggest that perhaps a dissonance-type mediating factor at work, i.e., if an individual is not involved in a sexual relationship, because of the inherent frustration of not being able to act on sexual impulses, the internal sexual, cognitive framework is adjusted downward. Thus, those without sexual partners are motivated to downplay the importance of sexuality in their lives, while those with a sexual outlet enjoy a more unmodulated sexual experience that includes a richer fantasy life and a greater appreciation for the role sexuality plays in the overall psychological armamentarium of an adult human being. It also could be conceptualized from a behavioral perspective in that those with partners are consistently rewarded for sexual behavior and thus their sexuality becomes a more salient part of their experiencing.

These "saliency" findings offer some support for the validity of the partner/no partner question raised in the first few paragraphs of this section. The results lend further credence to the notion that the data acquired during this study are a reasonable snapshot of subjects' behavior and attitudes.

Considerations for future research

Some readers undoubtedly will consider the compensatory debate as concluded by not only this research, but others as well. A case could be made that the compensatory issue is now moot. However, an argument also could be made that the effect simply hasn't yet been isolated because of the relative lack of sophistication in the data collection and design of this type of research. It has been suggested, for example, that perhaps an experimental design in which the level of sexual behavior actually is manipulated could focus the issue more clearly. In addition to addressing potential design changes that allow for more experimental control, future research might benefit by considering again the partner/no-partner dichotomy and exploring other methods of operationalizing the variable.

Another approach that also might be fruitful would be to look at the issue from a more integrative approach, i.e., that fantasy can play multitudinous roles. Our understanding of the phenomenon could be enhanced greatly by future research that tested the various roles for which sexual fantasy has been suggested.

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DEFINITIONS

In order to complete the questionnaire, the following definitions may be useful:

●Sexual fantasy: Any mental image or imagination which contains sexual matter and/or is sexually arousing to the person having the fantasy.

●Nonsexual-context fantasy: Any sexual fantasy which is experienced at any time day or night (except in nocturnal dreams), other than during masturbation or consensual sexual activity.

●Masturbatory fantasy: Any sexual fantasy experienced during masturbation which is sexually arousing. (Masturbation is defined as becoming sexually aroused usually to the point of orgasm by manipulating your own genitals with your hands, or an object such as a vibrator.)

●Consensual activity fantasy: Any sexual fantasy experienced during sexual relations with another person, usually leading up to and/or occurring during sexual interaction.

●Consensual sexual activity: Any behavior with another person(s) that is sexual arousing to all persons involved, which may or may not lead to orgasm. The behaviors in question include but are not limited to:

1. Petting, fondling or touching of the breasts, clitoris, vulva, vagina or anus of a female or the penis, scrotum or anus of a male.
2. Heterosexual intercourse (insertion of the penis into the vagina).
3. Heterosexual or homosexual oral sex (stimulation of the penis, vagina, breast or anus of one person by the mouth or tongue of another).
4. Heterosexual or homosexual anal intercourse (insertion of the penis into the anus).

●Available sexual partner: One or more person(s) with whom you were able to participate in consensual sexual activity at least half the time when you wanted to engage in sexual activity over the past four-week period. Below are a few examples of situations that might help you decide in which category you belong regarding available sexual partner:

1. If you are married, and one time during the past month you were interested in sexual activity but your partner was not, you would answer "No" to the question regarding available sexual partner.

2. If you are single and dating several people, and have sexual relationships with each of them, if you were able over the past four weeks to have sexual relationships with any one of them at least half the time when you are interested in having sexual relations with anyone, you would answer "Yes".

3. If you are living with someone and twelve times the past four weeks you desired sexual activity and they were receptive six times, you would answer "Yes" to the question regarding available sexual partner.

Sexual Fantasy Questionnaire

Fill in the appropriate circle on your Scantron sheet. DO NOT INCLUDE YOUR NAME OR ID NUMBER.

1. What is your gender?

- A. Female B. Male

2. In what category is your age represented?

- A. 20 and under B. 21 to 25 C. 26 to 30 D. 31 to 35 E. 36 and older

3. What is your race or ethnic background?

- A. White/non-Hispanic
B. Black
C. Hispanic
D. Asian or Pacific Islander
E. American Indian or Alaskan Native

4. What do you consider your religious affiliation?

- A. Catholic B. Protestant C. Jewish D. Other E. None

5. What is your best guess of your family's income last year? (If a financial dependent of your parents, estimate their income. If financially independent, estimate the income of you and/or your spouse, if appropriate.)

- A. \$7,500 or less
B. \$7,500-\$15,000
C. \$15,001-\$25,000
D. \$25,001-\$35,000
E. \$35,001 or more

6. What is your current marital status?

- A. Single B. Married C. Divorced/Separated D. Widowed E. Cohabiting (living together)

7. What do you consider your sexual orientation?

- A. Exclusively celibate (no sexual relationships)
B. Exclusively heterosexual (sexual relationships with the opposite sex)
C. Exclusively homosexual (sexual relationships with the same sex)
D. Bisexual (sexual relationships with both sexes), but mostly heterosexual activity
E. Bisexual (sexual relationships with both sexes), but mostly homosexual activity

8. Do you currently (the last four-week period leading up to today) have an available sexual partner? (For definition of available sexual partner, see instructions/definitions on Pages 1 & 2.)

- A. Yes B. No

- 9. In general, as a source of physical and emotional pleasure for you, sex is:**
- A. Very important
 - B. Moderately important
 - C. Slightly important
 - D. Unimportant
 - E. It varies
- 10. How would you rate the quality of your sexual relationships?**
- A. Very good
 - B. Above-average
 - C. Satisfactory
 - D. Unsatisfactory
 - E. I'm not currently involved in a sexual relationship.
- 11. When was the last time you had a sexual fantasy (See Page 1 for definition if needed) in any context?**
- A. Within the last hour
 - B. Within the last 24 hours
 - C. Within the last week
 - D. More than a week ago
 - E. Never had one
- 12. How often do you usually have sexual fantasies in any context?**
- A. Hourly
 - B. Daily
 - C. Weekly
 - D. Monthly
 - E. Rarely or never
- 13. Over the past four-week period up to and including today, how many times have you you had a sexual fantasy?**
- A. Not at all
 - B. 1-5 times
 - C. 6-10 times
 - D. 11-15 times
 - E. 16 or more times
- 14. Over the past four-week period up to and including today, how many times have you experienced consensual sexual activity (See Page 1 for definition if needed)?**
- A. Not at all
 - B. 1-5 times
 - C. 6-10 times
 - D. 11-15 times
 - E. 16 or more times
- 15. Over the past four-week period up to and including today, with how many different people have you experienced consensual sexual activity?**
- A. None.
 - B. 1 person
 - C. 2 people
 - D. 3 people
 - E. 4 or more people

16. Over the past four-week period up to and including today, how many times did you experience consensual sexual activity fantasy (See Page 1 for definition if needed)?

- A. Not at all
- B. 1-5 times
- C. 6-10 times
- D. 11-15 times
- E. 16 or more times

17. Over the past four-week period up to and including today, how many times have you masturbated (See Page 1 for a definition if needed)?

- A. Not at all
- B. 1-5 times
- C. 6-10 times
- D. 11-15 times
- E. 16 or more times

18. Over the past four-week period up to and including today, how many times did you experience masturbatory fantasy (See Page 1 for definition if needed)?

- A. Not at all
- B. 1-5 times
- C. 6-10 times
- D. 11-15 times
- E. 16 or more times

19. Over the past four-week period up to and including today, how many times did you experience nonsexual-context fantasy (See Page 1 for definition if needed)?

- A. Not at all
- B. 1-5 times
- C. 6-10 times
- D. 11-15 times
- E. 16 or more times

20. In general, when do you have the most sexual fantasies?

- A. During consensual sexual activity
- B. During masturbation
- C. During nonsexual periods (excluding night dreams)
- D. About equally
- E. I don't have sexual fantasies

21. How many times have you wanted to have sex over the past four weeks?

- A. Not at all
- B. 1-5 times
- C. 6-10 times
- D. 11-15 times
- E. 16 or more times